SEISMOLOGY.

W. J. HUMPHREYS, Professor in Charge.

[Dated: Weather Bureau, Washington, D. C., Nov. 3, 1920.]

TABLE I.—*Noninstrumental earthquake reports, September, 1920.*

Day.	Approximate time, Greenwich civil.	Station.	Approximate latitude.	Approximate longitude.	Intensity Rossi-Forel.	Number of shocks.	Duration.	Sounds.	Remarks.	Observer.
		CALIFORNIA.								
1919.	*H. m.*		° ′	° ′			*Sec.*			
Sept. 3	4 50	Los Angeles	34 03	118 15	2	3	3	None	Felt by one	P. Hansen.
9	16 44	Palo Alto	37 30	122 06	3	2	2;½	....do	Moved desk slightly	W. H. Shockley.
	16 49	San Jose	37 15	121 53	5	1	10	....do	Felt by many	M. Connell.
	16 50	Centerville	37 30	122 00	2	1	10	Rumbling	Felt by several	M. L. Mowry.
	16 57	San Francisco	37 48	122 26	2	1	3	None	Felt by one	M. W. Allen.
15	12 50	Los Angeles	34 03	118 15	2	3	Few.	....do	....do	P. Hansen.
17	6 20	Lakeport	39 03	122 56	3	1	5	....do	Felt by many; window shook	J. Overholser.
18	11 45	Los Angeles	34 03	118 15	3	1	3	....do	Felt by several	P. Hansen.
		UTAH.								
18	21 05	Brigham	41 30	112 00	5	1	.....	Rumbling	5–6 waves; spilled water from bucket.	J. N. Andersen.
18	21 10	Salt Lake City	40 45	111 50	3	1	Few.	None	Felt by many	P. J. O'Gara.
19	13 50	Brigham	41 30	112 00	5	1	.....	Rumble	....do	J. N. Andersen.

TABLE 2.—*Instrumental seismological reports, September, 1920.*

Time used: Mean Greenwich, midnight to midnight. Nomenclature: International.

[For significance of symbols see REVIEW for January, 1920, pp. 62–63.]

CALIFORNIA. *Theosophical University, Point Loma.*

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 1	.....	.....	.....	.....	100	100	.....	Tremors.
5	.....	.....	.....	.....	150	250	.....	
8	.....	.....	.....	.....	100	200	.....	
11	.....	.....	.....	.....	200	300	.....	
13	.....	.....	.....	.....	100	100	.....	
15	.....	.....	.....	.....	150	300	.....	
17	.....	.....	.....	.....	100	200	.....	
20	.....	.....	.....	.....	100	100	.....	
21	.....	.....	.....	.....	200	300	.....	

COLORADO. *Sacred Heart College, Denver.*

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 9–10	.....	.....	.....	.....	.....	.....	.....	Activity on both components during day.
17	.....	.....	.....	.....	.....	.....	.....	Visible activity at intervals during day.
20	.....	P_E	15 02 ..	.....	.....	.....	.....	P not visible on NS.
		S_E	15 12 ..	.....	.....	.....	.....	Numerous sets of waves with intervals of calm between.
		L_E	15 23 ..	18	*1,100	.....	.....	
		L_N	15 24 ..	18	.....	*1,120	.....	
		M_E	15 31 ..	17–18	*1,100	.....	.....	Heavy machinery in motion near by.
		M_N	15 31 ..	17–18	.....	*1,120	.....	
		C_E	17 02 ..	.....	.....	.....	.....	
		C_N	17 02 ..	.....	.....	.....	.....	
		F	17 08 ..	.....	.....	.....	.....	
24	.....	.....	.....	.....	.....	.....	.....	Visible activity at intervals during day.

*Trace amplitude.

DISTRICT OF COLUMBIA. *U. S. Weather Bureau, Washington.*

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 7	.....	eI_E	6 32 ..	18	.....	.....	.....	
		F	6 37 ..	.....	.....	.....	.....	
	8	eP	2 04 ..	.....	.....	.....	.....	
		PR_1	2 07 20	.....	.....	.....	.....	
		S	2 12 56	.....	.....	.....	.....	
		L	2 07 31	.....	.....	.....	.....	
		L	2 07 42	16	.....	.....	.....	
		F	3 15 ..	.....	.....	.....	.....	
	9	.....	.....	.....	.....	.....	.....	Slight disturbance (L?) between 19h and 20h, *ca.*
	20	P?	14 54 53	.....	.....	.....	8,800	
		S	15 04 50	.....	.....	.....	.....	
		eL	15 23 30	.....	.....	.....	.....	
		L	15 37 ..	24	.....	.....	.....	
		L	15 45 ..	18	.....	.....	.....	
		L	16 06 ..	18	.....	.....	.....	
		L	16 23 ..	18	.....	.....	.....	
		L	16 41 ..	24	.....	.....	.....	
		L	16 46 ..	20	.....	.....	.....	
		F	17 30 *ca*	.....	.....	.....	.....	
	21	P	17 54 48	.....	.....	.....	9,400	Very feeble.
		S	18 05 16	.....	.....	.....	.....	
		L	18 44 30	.....	.....	.....	.....	
		F	18 50 *ca*	.....	.....	.....	.....	
	24	P	22 01 40	.....	.....	.....	4,200	
		S	22 07 36	.....	.....	.....	.....	
		L	22 13 00	.....	.....	.....	.....	
		F	22 35 ..	.....	.....	.....	.....	
	27	e	5 41 20	.....	.....	.....	.....	
		L?	5 42 40	.....	.....	.....	.....	
		F	5 55 ..	.....	.....	.....	.....	

TABLE 2.—*Instrumental seismological reports, September, 1920*—Continued.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
ILLINOIS. *U. S. Weather Bureau, Chicago.*								
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 1	.....	P.....	2 54 18	.....	.....	.....	5,700	
		S.....	3 01 40	.....	.....	.....	.....	
		F.....	3 25 *ca*	.....	.....	.....	.....	
3	.....	L_E.....	4 10 *ca*	15	.....	.....	.....	
		L_E.....	4 16 ..	10	.....	.....	.....	
		F.....	4 30 *ca*	.....	.....	.....	.....	
4	.....	P?.....	14 30 04	.....	.....	.....	9,700?	
		S?.....	14 40 50	.....	.....	.....	.....	
		L.....	14 59 45	24	.....	.....	.....	
		L.....	15 17 ..	10	.....	.....	.....	
		F.....	17 10 *ca*	.....	.....	.....	.....	
7	.....	P.....	6 15 30	.....	.....	.....	4,700	
		S.....	6 22 00	.....	.....	.....	.....	
		L.....	6 27 50	14	.....	.....	.....	
		L.....	6 36 ..	12	.....	.....	.....	
		F.....	7 30 *ca*	.....	.....	.....	.....	
	.....	P.....	1 59 47	.....	.....	.....	9,000	
		PR_1...	2 03 31	.....	.....	.....	.....	
		PR_2...	2 05 31	.....	.....	.....	.....	
		S.....	2 10 00	.....	.....	.....	.....	
		SR_1...	2 18 50	.....	.....	.....	.....	
		L?.....	2 26 55	.....	.....	.....	.....	
		L.....	2 41 ..	20	.....	.....	.....	
		L.....	2 48 ..	16	.....	.....	.....	
		F.....	4 50 *ca*	.....	.....	.....	.....	
9	.....	P.....	19 24 54	.....	.....	.....	5,300	
		S.....	19 31 55	.....	.....	.....	.....	
		L.....	19 38 ..	30	.....	.....	.....	
		L.....	19 44 ..	22	.....	.....	.....	
		L.....	20	13	.....	.....	.....	
		F.....	22 10 *ca*	.....	.....	.....	.....	
10	.....	eL.....	22 56 40	20	.....	.....	.....	
		L.....	23 10 ..	16	.....	.....	.....	
		F.....	23 30 *ca*	.....	.....	.....	.....	
17	.....	P.....	23 58 07	.....	.....	.....	3,600	
18	.....	S.....	0 04 00	.....	.....	.....	.....	
		L.....	0 09 03	25	.....	.....	.....	Period decreases rapidly to 15 sec. at 14m.
		F.....	0 40 *ca*	.....	.....	.....	.....	
20	.....	P.....	14 53 48	.....	.....	.....	9,500	P not well recorded on NS component.
		PR_1...	14 58 30	.....	.....	.....	.....	
		S.....	15 04 20	.....	.....	.....	.....	S not well recorded on EW component.
		L?.....	15 22 40	.....	.....	.....	.....	
		M.....	15 41 45	.....	*33,000	.....	.....	L_E again 21*h* 16*m* to 21*h* 30 *m*, small A.
		F.....	20 *ca*. ..	.....	.....	.....	.....	
21	.....	P.....	3 03 30	.....	.....	.....	9,800	Probably same epicenter as preceding quake.
		S.....	3 14 23	.....	.....	.....	.....	
		eL.....	3 33 ..	22	.....	.....	.....	Not well recorded on NS.
		F.....	4 20 *ca*.	.....	.....	.....	.....	
21	.....	eL.....	5 57 15	.....	.....	.....	.....	
		F.....	6 20 *ca*.	.....	.....	.....	.....	
21	.....	P?.....	17 53 23	.....	.....	.....	9,500	Same epicenter as preceding.
		S.....	18 04 00	.....	.....	.....	.....	
		eL.....	18 24 30	.....	.....	.....	.....	
		L.....	18 27 30	18	.....	.....	.....	
		F.....	20 *ca* ..	.....	.....	.....	.....	
23	.....	P.....	5 43 22	.....	.....	.....	9,200	
		S.....	5 53 42	.....	.....	.....	.....	
		L.....	6 11 15	22	.....	.....	.....	
		L.....	6 28 ..	16	.....	.....	.....	
		F.....	6 50 *ca*	.....	.....	.....	.....	
24	.....	P.....	22 01 50	.....	.....	.....	4,300	Waves quite irregular.
		S.....	22 07 55	.....	.....	.....	.....	
		SR1...	22 10 24	.....	.....	.....	.....	
		L_N....	22 13 00	.....	.....	.....	.....	
		F.....	23 50 *ca*.	.....	.....	.....	.....	
27	.....	P.....	5 31 19	.....	.....	.....	2,700	
		S.....	5 35 40	.....	.....	.....	.....	
		L.....	5 37 40	.....	.....	.....	.....	
		M.....	5 39 45	.....	*6,000	*5,500	.....	
		F.....	6 40 *ca*.	.....	.....	.....	.....	

* Trace amplitude.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
NEW YORK. *Cornell University, Ithaca.*								
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 8	.....	e.....	2 12 20	9	.....	.....	.....	
		e.....	2 20 09	12	.....	.....	.....	
		F.....	2 43 ..	.....	.....	.....	.....	
20	.....	eP?...	15 06 24	3	.....	.....	.....	
		eS....	15 18 20	10	.....	.....	.....	
		e.....	15 21 30	16	.....	.....	.....	
		L.....	15 33 20	22	.....	.....	.....	
		F.....	17 01 ..	.....	.....	.....	.....	
24	.....	P_N....	22 02 10	3	.....	.....	.....	
		eS_E...	22 07 54	4	.....	.....	.....	
		L_E....	22 10 47	12	.....	.....	.....	
		L.....	22 12 50	22	.....	.....	.....	
		F.....	22 22 ..	.....	.....	.....	.....	
27	.....	e.....	5 42 12	5	.....	.....	.....	
		L.....	5 43 14	11	.....	.....	.....	
		F.....	5 54 ..	.....	.....	.....	.....	
CANAL ZONE. *Panama Canal, Balboa Heights.*								
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 3	.....	P_E....	16 20 20	.....	.....	.....	257	Direction prob. SW.
		P_N....	16 20 23	.....	.....	.....	.....	
		S_E....	16 20 48	.....	.....	.....	.....	
		S_N....	16 20 51	.....	.....	.....	.....	
		M_E....	16 20 52	.....	*800	.....	.....	
		M_N....	16 21 00	.....	.....	*400	.....	
		F_E....	16 23 35	.....	.....	.....	.....	
		F_N....	16 23 00	.....	.....	.....	.....	
20	.....	.....	.....	.....	.....	.....	.....	Slight tremors from distant quake between 14:30 and 17*h*; distance and direction unknown.
24	.....	P_E....	21 55 47	.....	.....	.....	579	Direction prob. NW.: distinctly felt at Penonome, R. P.
		P_N....	21 55 44	.....	.....	.....	.....	
		S_E....	21 56 50	.....	.....	.....	.....	
		S_N....	21 56 46	.....	.....	.....	.....	
		L_E....	21 57 20	.....	.....	.....	.....	
		L_N....	21 57 34	.....	.....	.....	.....	
		M_E....	21 57 46	.....	*44,000	.....	.....	
		M_N....	21 58 38	.....	.....	*44,000	.....	
		F_E....	22 19 00	.....	.....	.....	.....	
		F_N....	22 19 40	.....	.....	.....	.....	
VERMONT. *U. S. Weather Bureau, Northfield.*								
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 20	.....	P?.....	15 01 ..	.....	.....	.....	.....	
		eL.....	15 32 ..	40	.....	.....	.....	
		L.....	15 40 ..	24	.....	.....	.....	
		L.....	15 45 ..	18	.....	.....	.....	
		F.....	17 *ca* ..	.....	.....	.....	.....	
27	.....	e.....	5 44 ..	.....	.....	.....	.....	
		F.....	5 50 ..	.....	.....	.....	.....	

* Trace amplitude.

TABLE 2.—*Instrumental seismological reports, September, 1920*—Continued.

CANADA. *Dominion Observatory, Ottawa.*

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 4	.....	O.....	(14 17 16)	.....	.....	.....	(8780)	
		$P?_E$....	14 29 17	.....	.....	.....	.....	
		$S?_E$....	14 39 16	.....	.....	.....	.....	
		$eL?_E$..	14 57 ..	.....	.....	.....	.....	
		L_E....	15 07 ..	21	.....	.....	.....	
		L_E....	15 20 ..	19	.....	.....	.....	
		L_E....	15 30 ..	17	.....	.....	.....	
		L_E....	15 40 ..	16	.....	.....	.....	
		L_E....	15 45 ..	16	.....	.....	.....	
		$LR1?_E$	16 34 30	.....	.....	.....	.....	
		F.....	16 40 ..	.....	.....	.....	.....	
7	.....	O.....	5 55 44	.....	.....	.....	6450	Italian quake: epicentre in northern Italy.
		P.....	6 05 41	.....	.....	.....	.....	
		S_E.....	6 13 41	.....	.....	.....	.....	
		eL.....	6 23 12	.....	.....	.....	.....	
		L_E....	6 30 ..	17	.....	.....	.....	
		L_E....	6 42 ..	13	.....	.....	.....	
		F.....	7 10 ..	.....	.....	.....	.....	
8	.....	O?....	1 49 *ca*	.....	.....	.....	10,000	Distance obtained by approx. agreement in $PR1_E$, S_N, eL and $LR1_E$; O obtained by subtracting I_S at 10000 from $S?_N$ at 2–13 *ca*.
		$PR1_N?$	2 05 25	.....	.....	.....	.....	
		e_E.....	2 06 27	.....	.....	.....	.....	
		i_E.....	2 10 51	.....	.....	.....	.....	
		i_E.....	2 12 00	.....	.....	.....	.....	
		$S_N?$...	2 12 58	.....	.....	.....	.....	
		eL_N...	2 33 ..	40	.....	.....	.....	
		L.....	2 35 ..	40	.....	.....	.....	
		L.....	2 39 ..	22	.....	.....	.....	
		L_E....	2 48 ..	18	.....	.....	.....	
		L_E....	2 53 ..	16	.....	.....	.....	
		L_E....	3 08 ..	16	.....	.....	.....	
		L_E....	3 12 ..	14	.....	.....	.....	
		L_E....	3 20 ..	14	.....	.....	.....	
		L_E....	3 28 ..	13	.....	.....	.....	
		$LR1_E$.	4 00 ..	20	.....	.....	.....	
		F.....	4 20 ..	.....	.....	.....	.....	
9	.....	ePR1?	19 15 31	.....	.....	.....	.....	
		e.....	19 26 23	.....	.....	.....	.....	
		e.....	19 32 47	.....	.....	.....	.....	
		eL?....	19 43 48	.....	.....	.....	.....	
		L_E....	19 46 ..	35	.....	.....	.....	
		L_E....	19 55 ..	28	.....	.....	.....	
		L.....	20 00 ..	23	.....	.....	.....	
		L_E....	20 05 ..	20	.....	.....	.....	
		L_E....	20 16 ..	20	.....	.....	.....	
		L_E....	20 28 ..	17	.....	.....	.....	
		L_E....	20 35 ..	15	.....	.....	.....	
		$LR1_E$.	21 00 ..	23	.....	.....	.....	
		F.....	21 15 ..	.....	.....	.....	.....	
18	.....	e_E.....	0 02 10	.....	.....	.....	.....	NS component masked by micros.
		eL_E...	0 05 38	19	.....	.....	.....	
		F.....	0 22 ..	.....	.....	.....	.....	
20	.....	O.....	14 45 12	.....	.....	.....	9,660	
		P_V.....	14 57 57	.....	.....	.....	.....	
		i_E.....	15 04 55	.....	.....	.....	.....	
		i_E.....	15 06 27	.....	.....	.....	.....	
		S_V.....	15 08 40	.....	.....	.....	.....	
		eL_E...	15 29 48	50	.....	.....	.....	
		L.....	15 40 ..	27	.....	.....	.....	
		M_E....	15 45 ..	20	1,000	90	.....	A_V, 600 μ.
		L.....	15 55 ..	17	.....	.....	.....	
		L.....	16 06 ..	17	.....	.....	.....	
		L.....	16 21 ..	15	.....	.....	.....	
		L.....	16 45 ..	24?	.....	.....	.....	
		L.....	16 56 ..	17	.....	.....	.....	
		$LR1_V$.	16 56 48	16	.....	.....	.....	
		F.....	18 00 00	.....	.....	.....	.....	
21	.....	eL_E...	3 35 to 3 43	24 to 18	.....	.....	.....	NS component completely obscured by micros.
			3 43 ..	18	.....	.....	.....	
		L_E....	3 53 ..	16	.....	.....	.....	
		F.....	4 10 ..	.....	.....	.....	.....	
21	.....	e.....	18 04 24	.....	.....	.....	.....	
		$eL?_E$..	18 19 ..	.....	.....	.....	.....	
		L_E....	18 25 30	.....	.....	.....	.....	
		L_E....	18 30 ..	15	.....	.....	.....	
		L_E....	18 40 ..	15	.....	.....	.....	
		F.....	19 *ca*. ..	.....	.....	.....	.....	
24	.....	O.....	21 54 54	.....	.....	.....	4,340	
		P_N.....	22 02 37	.....	.....	.....	.....	
		$PR1_N$.	22 04 07	.....	.....	.....	.....	
		S.....	22 08 43	.....	.....	.....	.....	
		eL_E...	22 11 16	.....	.....	.....	.....	
		L_E....	22 15 30	22	.....	.....	.....	
		L_E....	22 28 ..	10	.....	.....	.....	
		F.....	23 15 ..	.....	.....	.....	.....	
27	.....	O?....	5 24 34	.....	.....	.....	4,220	
		$P_E?$...	5 32 08	.....	.....	.....	.....	
		$S_E?$...	5 38 08	.....	.....	.....	.....	
		eL.....	5 43 38	20	.....	.....	.....	
		L.....	5 54 ..	8	.....	.....	.....	
		L.....	6 03 ..	9	.....	.....	.....	
		F.....	6 30 ..	.....	.....	.....	.....	
28	.....	e.....	0 31 54	.....	.....	.....	.....	
		F.....	0 56 00	.....	.....	.....	.....	

CANADA. *Dominion Meteorological Service, Toronto.*

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
1920.			*H. m. s.*	*Sec.*	μ	μ	*Km.*	
Sept. 1	.....	L.....	3? 04 00	.....	*100	.....	.....	Doubtful as to being seismic.
4	.....	P.....	15 12 54	.....	.....	.....	.....	
		i.....	15 16 30	.....	.....	.....	.....	
		S?.....	15 19 42	.....	.....	.....	.....	
		L.....	15 27 30	.....	.....	.....	.....	
		M.....	15 29 30	.....	*300	.....	.....	
		F.....	16 00 42	.....	.....	.....	.....	
7	.....	eL.....	6 31 18	.....	.....	.....	.....	
		M.....	6 33 24	.....	*200	.....	.....	
		F.....	6 41 06	.....	.....	.....	.....	
8	.....	S.....	2 12 06	.....	.....	.....	.....	Faint trace. Italian quake.
		L.....	2 14 54	.....	.....	.....	.....	
		M.....	2? 15 54	.....	*500?	.....	.....	
		L?.....	2 52 00	.....	.....	.....	.....	
		eL.....	2 53 06	.....	.....	.....	.....	
		M.....	2 57 48	.....	*800	.....	.....	
		F.....	4? 09 48	.....	.....	.....	.....	
9	.....	i.....	19 07 12	.....	*300	.....	.....	P preceded by small micros. Difficult seismogram to read.
		P?.....	19 15 12	.....	.....	.....	.....	
		S.....	19 25 06	.....	.....	.....	.....	
		e?.....	19 27 54	.....	.....	.....	.....	
		L.....	19 54 54	.....	.....	.....	.....	
		iL.....	19 58 48	.....	.....	.....	.....	
		L.....	20 08 12	.....	.....	.....	.....	
		eL.....	20 16 12	.....	.....	.....	.....	
		M.....	20 16 36	.....	*500	.....	.....	
		L.....	21 05 30	.....	.....	.....	.....	
		L.....	21 24 30	.....	.....	.....	.....	
		F.....	21 32 36	.....	.....	.....	.....	
18	.....	i.....	0 01 36	.....	.....	.....	.....	
		eL.....	0 07 42	.....	.....	.....	.....	
		M.....	0 11 48	.....	*800	.....	.....	
		F.....	0 18 00	.....	.....	.....	.....	
20	.....	P?.....	14 57 42	.....	.....	.....	.....	
		i?.....	14 59 18	.....	.....	.....	.....	
		i.....	15 06 54	.....	.....	.....	.....	
		iS.....	15 08 30	.....	.....	.....	.....	
		L.....	15 15 18	.....	.....	.....	.....	
		L.....	15 40 18	.....	.....	.....	.....	
		L.....	15 40 54	.....	.....	.....	.....	Trace rather faint.
		M?.....	15 49 48	.....	*23000?	.....	.....	
		eL.....	16 55 54	.....	.....	.....	.....	
		F.....	18 32 36	.....	.....	.....	.....	
21	.....	eL.....	3 38 54	.....	.....	.....	.....	Micros 3:23:18 to 3:25:06.
		M.....	3 46 24	.....	*300	.....	.....	
		F.....	3 51 12	.....	.....	.....	.....	
24	.....	S.....	22 08 42	.....	.....	.....	.....	P not recorded.
		eL.....	22 12 24	.....	.....	.....	.....	
		eL.....	22 15 36	.....	.....	.....	.....	
		M.....	22 17 24	.....	*2000	.....	.....	
		F.....	23 06 24	.....	.....	.....	.....	
24	.....	L.....	23 46 36	.....	*200	.....	.....	
		F.....	23 49 54	.....	.....	.....	.....	
27	.....	i.....	5 30 54	.....	.....	.....	.....	
		eL.....	5 42 06	.....	.....	.....	.....	
		M.....	5 45 30	.....	*900	.....	.....	
		F.....	6 30 54	.....	.....	.....	.....	

*Trace amplitude.

TABLE 2.—*Instrumental seismological reports, September, 1920*—Contd.

Date.	Character.	Phase.	Time.	Period T.	Amplitude. A_E	Amplitude. A_N	Distance.	Remarks.
			CANADA. *Dominion Meterological Service, Victoria.*					
1920.			*H. m. s.*	*Sec.*	*μ*	*μ*	*Km.*	
Sept. 1	.....	P.....	3 03 13	.....	.....	.....	.....	
		M.....	3 08 37	.....	*200	.....	.....	
		F.....	3 17 28	.....	.....	.....	.....	
4	.....	P.....	14 58 02	.....	.....	.....	.....	
		M.....	15 32 58	.....	*200	.....	.....	
		F.....	16 22 38	.....	.....	.....	.....	
7	.....	P?.....	6 28 14	.....	.....	.....	.....	
		L.....	6 35 07	.....	.....	.....	.....	
		M.....	6 39 48	.....	*300	.....	.....	
		F.....	6 49 22	.....	.....	.....	.....	
8	.....	S.....	1? 58 47	.....	.....	.....	.....	
		L.....	2 08 38	.....	.....	.....	.....	
		eL.....	2 15 09	.....	.....	.....	.....	
		M.....	2 17 58	.....	*500	.....	.....	
		F.....	3 16 00	.....	.....	.....	.....	
9	.....	P.....	19 09 11	.....	.....	.....	8570	
		S.....	19 19 01	.....	.....	.....	.....	
		L.....	19 31 48	.....	.....	.....	.....	
		M.....	19 37 13	.....	*500	.....	.....	
		F.....	21 42 08	.....	.....	.....	.....	
18	.....	M.....	0 27 09	.....	*200	.....	.....	
20	.....	P.....	14 51 26	.....	.....	.....	2390	Alaska.
		S.....	14 55 22	.....	.....	.....	.....	
		L.....	15 02 16	.....	.....	.....	.....	
		M_1.....	15 23 54	.....	*5500	.....	.....	
		M_2.....	15 31 07	.....	*5500	.....	.....	
		eL.....	16 54 30	.....	.....	.....	.....	
		eL.....	17 06 24	.....	.....	.....	.....	
		M.....	17 13 12	.....	*2000	.....	.....	
		F.....	18 44 33	.....	.....	.....	.....	
				VERTICAL.				
		P.....	*14 51 30*	*2*	.....	.....	*2630*	
		S.....	*14 55 45*	*7*	.....	.....	.....	
		L.....	*15 02 30*	.....	.....	.....	.....	
		M.....	*15 19 31*	*30*	.....	*10*	.....	
24	.....	L.....	5 49 46	.....	.....	.....	.....	
		M.....	5 53 42	.....	*100	.....	.....	
24	.....	P.....	22 12 29	.....	.....	.....	.....	
		L.....	22 22 19	.....	.....	.....	.....	
		M.....	22 29 32	.....	*500	.....	.....	
		F.....	22 46 24	.....	.....	.....	.....	
27	.....	P?.....	5 35 16	.....	.....	.....	1400	Real P may not be recorded. Alaska.
		L.....	5 37 43	.....	.....	.....	.....	
		M.....	5 41 10	.....	*500	.....	.....	
		F.....	5 50 30	.....	.....	.....	.....	

*Trace amplitude.

Reports for September, 1920, have not been received from the following stations:

ALABAMA. *Spring Hill College*, Mobile.
ALASKA. *U. S. C. & G. S. Magnetic Observatory*, Sitka.
ARIZONA. *U. S. C. & G. S. Magnetic Observatory*, Tucson.
DISTRICT OF COLUMBIA. *Georgetown University*, Washington.
HAWAII. *U. S. C. & G. S. Magnetic Observatory*, Honolulu.
KANSAS. *University of Kansas*, Lawrence.
MARYLAND. *U. S. C. & G. S. Magnetic Observatory*, Cheltenham.
MASSACHUSETTS. *Harvard University*, Cambridge.
MISSOURI. *St. Louis University*, St. Louis.
NEW YORK. *Canisius College*, Buffalo; *Fordham University*, New York.
PORTO RICO. *U. S. C. & G. S. Magnetic Observatory*, Vieques.

SEISMOLOGICAL DISPATCHES.[1]

Los Angeles, September 3.

A light earthquake shock was felt in outlying parts of the city early to-day. No damage was reported.—*Associated Press.*

[1] Collected by seismological station, Georgetown University, Washington, D. C.

London, September 7.

The town of Fivizzano, 34 miles northwest of Lucca, has been completely demolished by an earthquake, according to a Spezia dispatch to the Exchange Telegraph. The dispatch adds that Solero and Monte were badly wrecked.—*Associated Press.*

Rome, September 7.

The earthquake in northern Italy was of a violent nature. Villa Collemandina is reported to have been destroyed. Castiglione, Pieve Fosciano, Vaglia, Camporgiano, San Donnino, Piasza Alserchio, Poggio, Castegnola, Fosciendora, and Canigiano have been badly damaged.—*Associated Press.*

Pisa, Italy, September 7.

The earthquake shock here was preceded by deep rumblings and followed by vertical and horizontal earth tremors which lasted for 13 seconds. The hands of the clock in the tower stopped at 7.55 o'clock this morning.—*Associated Press.*

Rome, September 9.

Another violent earthquake occurred in the Emilia district at 2.35 o'clock this morning, causing loss of lives and important damage. The communities suffering the most were Reggio, Ospedaletti, Bussana, Toano, and Cavola. This morning's shock was more violent than that of Tuesday. The Epoca estimates that the dead in the earthquake of Tuesday exceed 500 and the homeless more than 20,000.—*Associated Press.*

Riverside, Calif., September 10.

An earthquake shock was felt here this morning about 5.16. It was of sufficient violence to awaken sleepers and many persons fled into the open until the tremors subsided. No damage was reported.—*Associated Press.*

Rome, September 10.

Earthquake shocks continue, causing more victims among the rescuers owing to falling masonry. To-day there were shocks as far south as Cassino, near Naples. Apparently there was no serious damage nor victims, but the shocks produced great panic among the population, which recalled its experiences in the earthquake of 1915. A volcanic crater has suddenly opened at the top of Pizzo d'Ucello, a mountain 5,845 feet high about 9 miles northeast of Spezia. It is located on what appears to be the northeast corner of the district shaken by Tuesday morning's earthquake, which resulted in the loss of hundreds of lives in the region just north of Florence. A telegram from Spezia states the crater is emitting smoke and sulphuric fumes and that scientists there attribute the volcanic outbreak to the earthquake.—*Associated Press.*

Geneva, Switzerland, September 10.

A severe earthquake shook the southern slopes of the Swiss and Italian Alps yesterday from Monterosa to Bernina Pass, causing avalanches. The shock was accompanied by heavy snowfalls, and several Alpine villages are isolated. Four persons are reported to have been killed and many injured. Slighter shocks also were reported in the Swiss Alps around Zermatt and Ponterosina, but there were no casualties.—*Associated Press.*

Rome, September 10.

Minor earthquake shocks which have been felt since Tuesday morning in the devastated zone north of Florence indicate the disturbance is subsiding, according to Father Alfani, director of the observatory here. He